Patent Claims

1. A method for roughening a surface of a body (1), having the following steps of:

a) coating the surface with a mask layer (2)

b) applying preformed mask bodies (3) on the mask layer (2)

c) etching through the mask layer (2) at locations not covered by mask bodies (3)

d) etching the body (1) at locations of its surface that are free of the mask layer (2).

2. The method as claimed in claim 1, the body (1) containing aluminum gallium indium phosphite.

3. The method as claimed in claim 1, the body (1) containing aluminum gallium indium nitride.

4. The method as claimed in one of claims 1 to 3, the mask layer (2) comprising a dielectric.

5. The method as claimed in one of claims 1 to 4, balls made of polystyrene being used as preformed mask bodies (3).

6. The method as claimed in one of claims 1 to 5, the etching steps being carried out by means of a dry etching method.

7. The method as claimed in one of claims 1 to 6, the method being carried out in such a way that structures (4) remain in the surface of the body (1), for the width (b) of which structures in relation to the etching depth (t) the following holds true:

$0.1 < t/b < 10$.

8. The method as claimed in one of claims 1 to 7, the method being carried out in such a way that structures (4) remain in the surface of the body (1), for the width (b) of which structures in relation to the etching depth (t) the following holds true:

$0.25 < t/b < 5$.

9. The method as claimed in one of claims 1 to 8, the residues of the mask body (3) being removed from the mask layer (2) immediately after step c).

10. The method as claimed in one of claims 1 to 9, the etching depth (t) in the body (1) being between 50 and 100 nm.

11. The method as claimed in one of claims 1 to 10, the mask layer (2) being applied with a thickness (d) of between 10 and 100 nm.

12. The method as claimed in one of claims 1 to 11, the mask body (3), on the mask layer (2), having a lateral extent (A) of between 150 and 300 nm.

13. The method as claimed in one of claims 1 to 12, the first etching step being effected by means of a process step which etches the mask bodies (3) to a greater degree than the body (1).

14. The method as claimed in one of claims 1 to 13, the etching through the mask layer (2) being effected by means of an installation for reactive ion etching.

15. The method as claimed in claim 14, a mixture of CHF_3 and Ar being used as etching gas.

16. The method as claimed in one of claims 1 to 15,

the body (1) being etched by means of an installation suitable for an inductively coupled plasma.

17. The method as claimed in claim 16,
a mixture of CH_4 and H_2 being used as etching gas.

18. An optoelectronic component,
having a semiconductor body which contains aluminum gallium indium phosphite and whose surface is patterned, the following holding true for the width (b) of the structures (4) in comparison with the depth (t) of the structures (4): $0.25 < t/b < 5$.

19. An optoelectronic component,
having a semiconductor body which contains aluminum gallium indium nitride and whose surface is patterned, the following holding true for the width (b) of the structures (4) in comparison with the depth (t) of the structures (4): $0.25 < t/b < 5$.